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A new species of *Chaetopteryx* (Trichoptera, Limnephilidae) from the Northeast Carpathians

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An unusually small-sized *Chaetopteryx* species with reduced tibial spur number and open "anal tube" was collected first by DAVID MURÁNYI, curator of Small Insect Orders at the Hungarian Natural History Museum, on the Valhani Plateau of the Ignis Mts in the northeast Carpathians, Romania. Its description follows using the detailed genital terminology of VSHIVKOVA (2007) and OLÁH & JOHANSON (2008).

***Chaetopteryx aproka* n. sp.**

Description. Male (in alcohol). Pale testaceous small species with lighter body appendages and with pale yellowish-testaceous wings. Labrum and vertex dark brown. Anterior wing with rounded apex and with tendency to brachyptery; very long erect spine-like setae present on both the membrane and the veins; setae on the veins usually stronger. Tibial spur number 022. Forewing length varies between 3-8 mm with an average of about 5 mm.

Male genitalia. Posterodorsal spinate area of vestitural noncellular microtrichia present on tergite VIII and composed of tooth-shaped cuticular denticles; the spinulose surface is small, restricted to a mesal patch and only scarcely covered with microtrichia. Segment IX long ventrally, very short strap or bridle-like dorsally; its lateral length elongated by rounded almost semicircular convexity anteriorly, reinforced with well developed antecosta; a heavily sclerotized triangular flank is developed on the lateral shoulder posterad in the midlateral concavity; its dorsal margin especially strengthened by vestige of sternal abdominal lateral suture of the fused segment IX. Segment X partly fused to tergite IX forming together the short dorsal bridle and partly present as less sclerotized membranous vestigium connecting mesally the less sclerotized deeply invaginated basal holes of the cup-like cerci. Cerci (superior or preanal appendages) large and subquadrangular both in lateral and caudal view; in caudal view cerci are somehow bilobed, but differently formed than in the *Potamophylax latipennis* species group; here the mesal lobe is elevated and delineated by more sclerotized carina but extending very slightly dorsad; this elevated ridge pronounced by its irregular serrate (denticulate) margin; the lateral setose lobe almost triple the width of the mesal lobe. Paraproctal complex (intermediate appendages) with its upward curving apices is the longest structure in lateral view; in caudal view inner branch running to the base of outer branch and forming the mesal frame of the outer branch triangle; outer branch of the paraproct exhibits a closed, almost regular triangular frame. Membranous subanal lobe short and narrow. Gonopods elongated with slight basal constriction, with ventrobasal angulate corner and with tapering apex. Phallic organ composed of large, mostly membranous aedeagus and short parameres; apex of aedeagus with a pair of sclerotized stout and short tooth-like spines somehow connected to oval slightly sclerotized subapical lateral wings, other parts are membranous and flexible with varying configurations, depending on its state of erection; paramere shaft short slender and armed with 1 longer and 1-2 shorter apical spines; paramere spines tightly adhered together; the entire paramere, the total length of shaft and spines is much shorter than the aedeagus.

Female (in alcohol). Colour pattern is similar to that of the male. Length of forewing more stable varying between 6 and 8 mm. Brachyptery tendency even more pronounced, forewing shorter than abdomen, probably unable to fly.

Female genitalia. There is no closed "anal tube" formed by the complex of the variously fused tergite IX and segment X; the tube that is more or less closed in females of the *Chaetopteryx rugulosa* species group is open in this species. Tergite IX with long digitiform apicolateral processes in lateral view, the processes are widely separated in dorsal view; besides the usual decumbent vestitural small setae there are long and strong black setae present and located dorsoposteriad in two lateral groups of 7-8 setae. Sternite IX setose laterally and connected by glabrous large convex mesal plate, this glabrous ventral surface of sternite IX functions like the upper vaginal lip present sometimes as a free supragenital plate in the Chaetopterygini tribe. Segment X represented by membranous dorsum just visible between the digitiform apicolateral processes of tergite IX and by the slightly sclerotized ventrum, the free flapping ventral plate; this ventral plate has concave apical margin visible in dorsal and ventral view and its lateroapical corner setose ventrally; in lateral views the ventral plate of segment X visible as a long digitiform structure closely lying on the dorsum of sternite IX. The open tubing function around the proctal opening of anus is realised by the membranous dorsum and the ventral plate of segment X. The lower vaginal lip, the vulvar scale is visible somewhat separated from sternite VIII by its more sclerotized structure, glabrous without any setae; its lateral lobes large triangular, its mesal lobe small. Vaginal chamber is short, reaching only half the length of sternite VIII; vaginal sclerite pattern clearly visible.

Types. Romania, Maramureş county, Munții Ignis, Desești, Stațiunea Izvoare, open brook with spring bog on the Valhani Plateau, 1020m, 47°43'N, 23°44'E, 24.09.2005, leg. J. KONTSCÁN, D. MURÁNYI, J. NÉDLI (1 male Holotype and 2 males Paratypes are deposited in the Hungarian Natural History Museum (Budapest). Other paratypes. Same locality, but 07.10.2010, leg. P. BARCÁNFALVI, D. MURÁNYI & J. OLÁH, (15 males, 2 females). Maramureş county, Muntii Ignis, Desești-Stațiunea Izvoare, forest spring at settlement, 920m, 47°45'N 23°43'E, 08.10.2010 leg. P. BARCÁNFALVI, D. MURÁNYI & J. OLÁH, (28 males, 10 females). Same locality, but 20.X.2010 leg. Á. ECSEDI, J. OLÁH & I. SZIVÁK, (12 males, 10 females). Same locality and collectors, but 21.X.2010 (21 males, 14 females), 22.X.2010 (14 males, 6 females). Same locality as holotype, but 21.X.2010, leg. Á. ECSEDI, J. OLÁH & I. SZIVÁK, (25 males, 8 females). The paratypes are in the following collections: Oláh Private Collection (Debrecen), Malicky Private Collection (Lunz-am See, Austria), Museo Civico di Scienze Naturali (Bergamo), Naturhistoriska Riksmuseet (Stockholm), National Museum of Natural History, Smithsonian Institution (Washington DC).

Etymology: the name refers to the unusually small size of this species, tiny "apróka" in Hungarian

Diagnosis. Despite its reduced spur number this species is a true *Chaetopteryx* and despite its modified female "anal tube" it belongs to the *Chaetopteryx rugulosa* species group as defined by MALICKY & al. (1986): pale colour; very blunt forewing with rounded apex; very strong and long erect setae on forewing; tendency to brachyptery; inner branch of paraproct large foliform with dorsad turning apex; cerci cumbuliform having hollow basal part deeply intruding into segment IX; aedeagus with subapical lateral wings, its variously spread configuration depends on erection state; simple short parameres with a few apical spines. Moreover

this species is a spring dweller resulting in isolation and unusual modification. Closest to *Chaetopteryx marinkovicae* MALICKY & KRUSNIK, but differs by its small size; by having a mesal lobe on cerci, delineated by elevated carina and having no digitiform processes on the cercal-paraproctal complex; its gonopods elongated with completely different shape both in lateral and caudal view. The relation of *Chaetopteryx aproka* n.sp. to *C. marinkovicae* is indicated also by the "anal tube" of the females. Among the females of the *Chaetopteryx rugulosa* species group, only the females of *C. marinkovicae* have the "anal tube" almost open, at least similarly to *C. aproka* n.sp. the ventral lip is not fused to the sclerotized tergite IX, but fused to the membranous tergite X visible in cover below the setose tergite IX.

References

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